## 4.3 Multi-Modal Transportation

**Railroad Facilities**

There is no rail service along the entire MT 78 corridor. Montana Rail Link operates a main line to the north of MT 78 that runs through Columbus.

**Air Facilities**

The Red Lodge Airport is located approximately one mile northwest of Red Lodge. Commercial airlines do not currently service the Airport. The Airport averages 22 operations daily, 46 percent of which is local general aviation.

The Laurel Municipal Airport is located approximately 45 miles northeast of Red Lodge. Commercial airlines do not currently service the Airport. The Airport averages 36 operations daily, nearly 60 percent of which is local general aviation.

Located approximately 60 miles northeast of Red Lodge, the Billings Logan International Airport offers 35 commercial scheduled air flights daily. In 2003, there were over 370,000 passenger boardings and nearly 375,000 passenger deplanements, making the Airport one of the largest and busiest facilities in the region. The Airport offers services from eight national carriers.

Yellowstone Regional Airport is located in Cody, Wyoming, approximately 60 miles south of Red Lodge. The Airport is served by three national carriers. The Airport averages over 100 operations per day, the majority of which are local general aviation (42 percent).

**Bicycle and Pedestrian Facilities**

There are no existing facilities within the corridor reserved solely for bicycle or pedestrian use. The MDT bicycle map notes that shoulders throughout this portion of the corridor are less than four feet in width and grades are greater than seven percent. Based on a field review, shoulders generally appear to be less than one foot in width or nonexistent. Anecdotal data from a local bicycle shop in Red Lodge suggests that there is low bicycle usage of the corridor, mainly due to sight distance limitations, high vehicle speeds, and the limited shoulder along the corridor. The bicycle shop does not recommend the route to its customers.

The Yellowstone Valley Cycling Club of Billings conducts a club bicycle ride from Roscoe to Red Lodge once a year. According to the club, the route is physically challenging due to the steep grades, and is therefore not popular among its members. Based on anecdotal information, Highway 212 is used more often by bicyclists because it provides a more direct link to Billings. Adventure Cycling, a national bicycling organization, was contacted regarding their use of the corridor. They do not use the route and therefore have no data regarding ridership.

Few pedestrians use the corridor as a walking facility, although users include school-aged children who may walk short distances to bus stops along the corridor and residents who live in the area. There are no planned or proposed trails or routes for bicycle or pedestrian use within the corridor at this time.

**Transit Services**

There are no public transit service providers within the corridor. The Red Lodge Senior Citizens Center provides transportation services for senior citizens traveling between Red Lodge and Billings. There are no known service providers that travel the MT 78 corridor between Red Lodge and Roscoe.

**Utilities**

Utilities within the corridor include telephone and electric service. Telephone service is provided by Qwest Communications. Electric service is provided by NorthWestern Energy. Each of these utility companies were contacted, but could not provide a map of transmission lines in the area. A private utility mapping contractor was also contacted, but did not have any data within the corridor. Because no utility mapping exists for the area, a survey of utilities would be necessary prior to the completion of any project.

## 4.4 Area Projects

There are a number of recent, planned, and ongoing projects along MT 78 between Red Lodge and Columbus. They are as follows:

- The study corridor was resurfaced in 2006 to address pavement preservation needs.

- *Red Lodge – NW* is a reconstruction project of MT 78 from the beginning of the route at the intersection with P-28 in Red Lodge (MP 0.0) extending north and west to MP 5.1±. This project is proposed to bring the roadway up to current design standards.

- *8km NW Red Lodge* is a safety improvement project to address a crash cluster location. The project is located on MT 78 between MP 5.2 and MP 5.6. This project is proposed to reconstruct a sharp horizontal curve to a larger radius with flatter slopes.

- *Columbus-South* is a reconstruction project to improve safety and efficiency and to accommodate increasing travel demands. The project extends from the bridge over the Yellowstone River just south of Columbus at RP 45.9 south to RP 37.1. This project is currently under construction.

- *Absarokee-North & South* is a full reconstruction project to improve safety and efficiency and to accommodate increasing travel demands. It ties to the Columbus - South project at RP 37.1 and continues south to RP 29.8. This project is scheduled for construction in 2010.

- *Roscoe-Jct 419* is a combination widen/overlay and reconstruction project to improve safety and efficiency and to accommodate increasing travel demands. The project begins north of Roscoe at MP 20.15 and ends just south of Junction 419 at MP 29.8. This project is scheduled to be let to contract in early 2010.

## 4.5 Summary of Existing Geometric Issues and Identified Improvement Needs

The investigation of existing conditions of the MT 78 transportation system identified a number of issues to be considered in development of the corridor plan. These issues are described in the following list.

1. Steep grades exist over a large portion of the corridor. Grades up to and exceeding seven percent, which is the maximum recommended grade for mountainous terrain, are common, especially on the southern portion of the corridor.

2. Sharp horizontal curves exist at the southern and northern ends of the corridor and at a few scattered locations within the middle portion of the corridor.

3. Passing sight distance is limited due to poor horizontal and vertical alignments. The road is used by agricultural vehicles, trucks, recreational vehicles, and other heavy, slow moving vehicles. The lack of ability to pass presents a potential safety hazard.

4. Stopping sight distance is limited, not only due to poor horizontal and vertical alignments, but also due to slope and clear zone issues. In a number of locations short hills connect steep grades, resulting in a "roller-coaster" effect, which leads to inadequate sight distance. Additionally, steep side slopes and short inslopes narrow the line of sight from the roadway. Inadequate sight distance is a safety concern as wildlife, vehicles, and other obstructions can easily be hidden from a driver's view, limiting the ability to stop or take other action to avoid collisions. Narrow clear zones allow wildlife to approach the roadway without being seen by drivers.

5. Crash concentrations are located between MP 5± to 9.5± and from MP 18.5± to 20±, as well as in scattered locations between MP 12± to 14± and MP 17± to 18±.

6. Shoulder widths throughout the corridor are not wide enough to accommodate vehicle stops or exclusive bicycle travel.

7. There are few places to pull off the road due to roadway width and the lack of sight distance. This causes problems for all motorists.

8. There are a number of poorly-aligned access points along the corridor. These access points represent a hazard due to limited sight distance, with vehicles entering the roadway at low speeds undetected by drivers approaching at relatively high speeds.

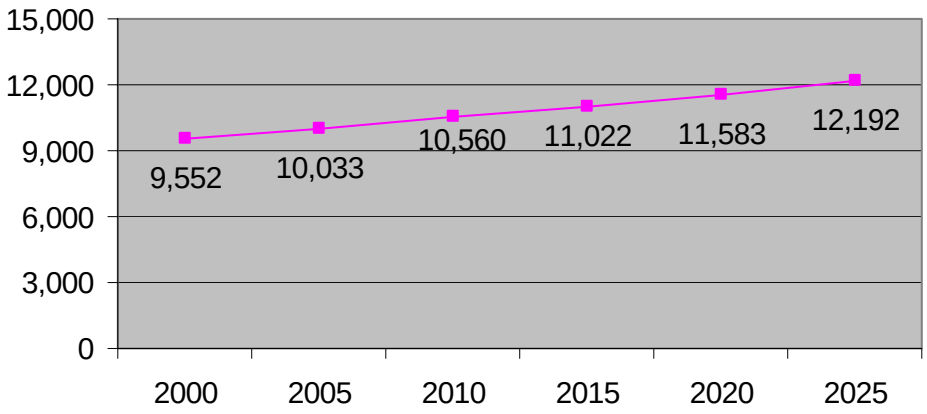
9. According to the MDT bridge sufficiency ratings database, the two existing bridges within the corridor are not deficient.

# 5.0 TRANSPORTATION FORECASTS

## 5.1 Population Projections

NPA Data Services Inc., a Washington, D.C.-based economic research, forecasting, and data development firm, has projected county populations into the year 2025. As shown in Figure 5.1, Carbon County is projected to gain 2,159 residents between 2005 and 2025 for a total population of 12,192 in 2025.

**Figure 5.1 Carbon County Population Projections, 2000 – 2025**




This represents nearly a 22 percent increase in population for the period 2005-2025. The annual average growth rate for the 20-year period from 2005 to 2025 is projected to be approximately one percent per year. In comparison, the city of Red Lodge is projected to grow at an annual rate of 2.2 percent.

## 5.2 Traffic Projections

The forecasts for the Carbon County population and Red Lodge population show slow to moderate growth. Population growth rates alone, however, cannot provide an accurate measure of traffic growth for the MT 78 corridor because they do not account for tourist, commerce, and commuter traffic. Traffic count data collected on MT 78 over the period 1970 to 2004 may provide a more accurate estimate of traffic growth. There is a large difference between traffic volumes throughout the entire MT 78 corridor between Red Lodge and Columbus. Although the growth rates associated with traffic count locations at MP 6± and MP 13± are fairly high, the traffic volumes themselves are fairly low. In comparison, there are higher traffic volumes north of the MT 78 junction with Highway 419, but growth rates for this portion of MT 78 are generally lower. Table 5-1 lists several growth rates and the corresponding estimated traffic volumes for the corridor.

**Table 5-1 Growth Rates and Projected AADT for the MT 78 Corridor, 1970 – 2004**

| Annual Growth Rate | Method of Calculation of Growth Rate | Estimated AADT in 2006 | Projected AADT in 2026 |
|---|---|---|---|
| 5.13 | Calculated from traffic count data at MP 6± | 1,139 | 3,098 |
| 5.69 | Calculated from traffic count data at MP 13± | 927 | 2,804 |
| 4.14 | Average for corridor from MP 0± to MP 47.5± weighted by segment length | 1,665 | 3,747 |
| 3.95 | Average for corridor from MP 6± to MP 44.5± | 1,606 | 3,485 |

As noted in Table 5-1, the various growth rates produce projections within a range of approximately 2,800 to 3,800 AADT in 2026. Even the greatest projected increase in AADT does not affect capacity recommendations, but may result in a need for passing and/or climbing lanes in some locations (see Chapter 7).

On the portion of MT 78 north of the study area, traffic volumes tend to be higher. This is primarily due to traffic related to the Stillwater Mine, which splits off at the junction with MT Secondary Highway 419 (S-419) (MP 29.8±). MDT's March 2002 *Final Environmental Impact Statement, Absarokee to Columbus* reported that AADT on MT 78 north of S-419 junction was 1,710. South of the junction, it dropped to 590 AADT. AADT (estimated and projected) in Table 5-1 for MP 0± to MP 47.5± and MP 6± and MP 44.5± include higher traffic volumes north of S-419. This explains in part the discrepancy between the lower traffic volumes in the first two rows of the table above and the higher traffic volumes in the bottom two rows.


# 6.0 IMPROVEMENT OPTIONS ANALYSIS

Based on existing roadway conditions, it was determined that in certain areas along MT 78, spot improvements could be made to the roadway in order to improve sight distance and, therefore, safety. However, because the roadway failed to meet both vertical and horizontal requirements in numerous locations, a full reconstruction should be considered in the long range plan.

The roadway can be brought up to current design standards in the most cost-effective manner by improving the roadway on the current alignment throughout the majority of the corridor. This strategy is cost-effective because it requires less new right-of-way and minimizes adverse impacts to the surrounding built and natural environment. An exception is at the northern end of the corridor, where two steep hills leading into Roscoe limit the ability to improve roadway geometry. In this particular area, improvement options include building the road on a new alignment in order to meet current standards.

There were some early discussions within the Department regarding reconstruction on an entirely new alignment or on an historic alignment over the entire corridor. An off-alignment option over the full corridor did not generate any interest or comment at the public meetings. Once it was determined through the study analysis that improved safety and geometric design could largely be achieved while remaining on the existing alignment, an off-alignment option over the entire corridor was not explored further.

In this chapter, the corridor is discussed mile-by-mile. Suggested improvements, including both spot improvements and full reconstruction options, are presented. At the end of the chapter, three alignment options are shown for Roscoe Hill. Specific recommendations and a more detailed discussion of improvement options are provided in Chapter 7. Improvement options between MP 5± and MP 18± are discussed in Section 6.1. Alignment options for Roscoe Hill (MP 18± to MP 20±) are discussed in Section 6.2. One of the improvement options, Improvement Option 3, extends beyond the defined corridor study limits, to MP 21.5±, in order to tie the new alignment in with the existing alignment.